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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/569,783	02/24/2006	Makoto Tanaka	MES1P094	6013
58766	7590	10/31/2008		
Beyer Law Group LLP P.O. BOX 1687 Cupertino, CA 95015-1687			EXAMINER MCALISTER, WILLIAM M	
			ART UNIT	PAPER NUMBER
			3753	
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			10/31/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/569,783

Applicant(s)

TANAKA ET AL.

Examiner

WILLIAM MCCALISTER

Art Unit

3753

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 September 2008.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
4a) Of the above claim(s) 11 is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-10 and 12-20 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 24 February 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/550a)
Paper No(s)/Mail Date 2/24/06, 2/12/07, 8/29/08
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of species 1 in the reply filed on 9/29/2008 is acknowledged. The traversal is on the ground(s) that there is no search burden. This is not found persuasive because, this application being a national stage entry of an international application, the proper inquiry is whether there is a contribution which the common subject matter makes over the prior art – not whether there exists a search burden. As set forth in the office's communication of 8/29/2008, there is no special technical feature under PCT Rule 13.2.

The requirement is still deemed proper and is therefore made FINAL. Claim 11 is withdrawn.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claim 19 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

The specification provides no guidance as to how one of skill would alter the verification flow in various amounts.

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claim 18 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. There is insufficient antecedent basis for the phrase "altering the verification flow", and it is not understood what limitations this phrase is meant to impart.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1-5, 7, 9, 10, 12-17, 19 and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Ollivier (US 6,450,200).

Regarding claim 1, Ollivier discloses a flow control device (see FIG 1A) for controlling a flow of a fluid in a channel in which the fluid is supplied to a target where a pressure is lower than a fluid supply source, comprising:

a first opening and closing valve (14) for opening and closing the channel;

a flow control component (22) with a flow control valve mechanism for controlling the flow of the fluid flowing through the channel (by virtue of the fact that it's a MFC);

a pressure detector (6) capable of detecting a pressure of the fluid on a same side as the flow control valve mechanism relative to the first opening and closing valve; and

a deviation measurement/control component (controller 3, and the inherent MFC comparator) for calculating a deviation of the flow controlled by the flow control component from a standard level wherein the deviation measurement/control component:

fixes an aperture of the flow control valve mechanism (col. 5 lines 54-60)
and measures changes in the pressure using the pressure detector while the channel is closed by the first opening and closing valve (col. 5 lines 60-67), and
calculates the deviation from the standard level based on the measured changes in the pressure (col. 6 lines 1-10).

Regarding claim 2, Ollivier discloses a flow control component comprising a flow detector capable of measuring the flow of the fluid flowing through the channel on the same side as the flow control valve mechanism relative to the first opening and closing valve (inherent to an MFC in the location disclosed), and controls the flow of the fluid flowing through the channel by adjusting an aperture of the flow control valve mechanism based on a target flow and the flow measured by the flow detector, and

the deviation measurement/control component is capable of adjusting an output level (the signal sent to the valve actuator from the set point/flow rate comparator, the comparator being inherent to the MFC) representing the flow by the flow detector (id.), based on the deviation from the standard level (col. 6 lines 1-10).

Regarding claim 3, Ollivier discloses a second opening and closing valve (24) for opening and closing the channel on a side opposite the first opening and closing valve relative to the flow detector. Further, the deviation measurement/control component (the MFC comparator) would be capable of reading the output level representing the flow by the flow detector while the channel is closed by the first and second opening and closing valves, and adjusting an output level representing zero flow by the detector.

Regarding claim 4, Ollivier discloses an accumulator (5) as claimed.

Regarding claim 5, Ollivier discloses:

a temperature detector capable of measuring a temperature of the fluid on the same side as the flow control valve mechanism relative to the first opening and closing valve (see col. 5 lines 30-32), wherein

the deviation measurement/control component further calculates the deviation from the standard level (see col. 5 lines 35-47) based on:

an initial pressure P_0 of the fluid at a first time (inherent to $\Delta P/\Delta t$) in a certain time interval (Δt) including a time the channel is closed by the first opening and closing valve,

an absolute temperature T_1 of the fluid at a second time period in the certain time interval (T), and

a time period from a time the pressure of the fluid reaches a certain first standard pressure P_1 , after the channel is closed by the first opening and closing valve, until a time the pressure reaches a certain second standard pressure P_2 which is different from the first standard pressure P_1 (inherent to $\Delta P/\Delta t$).

Regarding claim 7, Ollivier discloses a mass flow control device comprising a flow control component which has in a channel (1) through which a fluid flows: a flow detector (inherent to MFC 22) for detecting a mass flow of the fluid that flows through the channel and outputting a flow signal; and a flow control valve mechanism (inherent to MFC 22) for controlling the mass flow by altering a valve aperture by means of valve drive signals, and controls the flow control valve mechanism based on an externally input flow set signal and the flow signal, wherein

the mass flow control device comprises a deviation measurement/control component which has in the channel: a first opening and closing valve (14) for opening and closing the channel; an accumulator (5) having a certain volume; and a pressure detector (6) for detecting a pressure of the fluid and outputting a pressure detection

signal, and controlling the first opening and closing valve and the accumulator and the pressure detector to perform a mass flow test operations (col. 5 line 54 to col. 6 line 22).

Regarding claim 9, see the analysis of claim 3.

Regarding claim 10, Ollivier discloses the first opening and closing valve, the accumulator, and the pressure detector to be provided further upstream than the flow detector and the flow control valve mechanism (see FIG 1A).

The method steps of claims 12-17, 19 (as best understood), and 20 would necessarily be performed during the normal and usual operation of Ollivier's device.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.

4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
10. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).
11. Claims 2-5, 7, 9, 10, 12-17, 19 and 20 are alternatively rejected under 35 U.S.C. 103(a) as being unpatentable over Ollivier in view of Wilmer (US 5,865,205).

Regarding claims 2 and 7, should it be determined that Ollivier does not inherently disclose a MFC with a set point/measured flow rate comparator, it would have been obvious to one of ordinary skill in the art at the time of invention to use such a MFC to control flow through Ollivier's system. Wilmer teaches that it was known to use such a MFC (308, 360, 370, 332, 357) to control flow through a similar system. The remaining claim recitations read on this combination as they do on Ollivier alone.

Regarding claim 3, Ollivier discloses a second opening and closing valve (24) for opening and closing the channel on a side opposite the first opening and closing valve

relative to the flow detector. Further, the deviation measurement/control component (Wilmer's MFC comparator 308) would be capable of reading the output level representing the flow by the flow detector while the channel is closed by the first and second opening and closing valves, and adjusting an output level representing zero flow by the detector.

Regarding claims 4, 5, 9 and 10, see the analyses set forth under paragraph 7 above.

The method steps of claims 12-17, 19 (as best understood), and 20 would necessarily be performed during the normal and usual operation of the Ollivier-Wilmer device.

12. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ollivier, and alternatively Ollivier and Wilmer, as applied to claim 2 above.

Regarding claim 6, mathematical derivation of an expression from well known physical relationships, and the use of functional equivalents thereof (including the use of a ratio to indicate a difference), was within the skill of an artisan at the time of invention and it would have been obvious to do so to achieve similar results.

13. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ollivier, and alternatively over Ollivier and Wilmer, as applied to claim 7, above.

Regarding claim 8, Ollivier discloses the invention as claimed, including that it was known in the art at the time of invention to calibrate a set point based on a result of a test (see col. 6 lines 12-16). Neither Ollivier nor Wilmer teach the step of calibrating the flow detector. However, an MFC's actuation signal was known to be, by definition, a function of the set point and flow rate measurement only. Calibration of a MFC could therefore be performed in a finite number of ways - on either of the two inputs, the output, or a combination thereof. Predictably, since these three distinct signals directly affect actuation of the valve, calibration of one rather than the other would have resulted in calibration of the MFC. It therefore would have been obvious to one of ordinary skill in the art at the time of invention to calibrate the flow rate measurement instead of the set point to predictably achieve the same result of MFC calibration.

14. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ollivier, and alternatively over Ollivier and Wilmer, as applied to claim 17, above.

Regarding claim 18, the analysis of claim 8 set forth under paragraph 13 above is hereby incorporated by reference. Normal and usual operation of the resultant device would have necessarily involved the step of calibrating the flow detector automatically based on the test results.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to WILLIAM MCCALISTER whose telephone number is

(571)270-1869. The examiner can normally be reached on Monday through Friday, 9-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory Huson can be reached on 571-272-4887. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/WILLIAM MCCALISTER/
Examiner, Art Unit 3753

/Stephen M. Hepperle/
Primary Examiner, Art Unit 3753

WM
10/27/2008